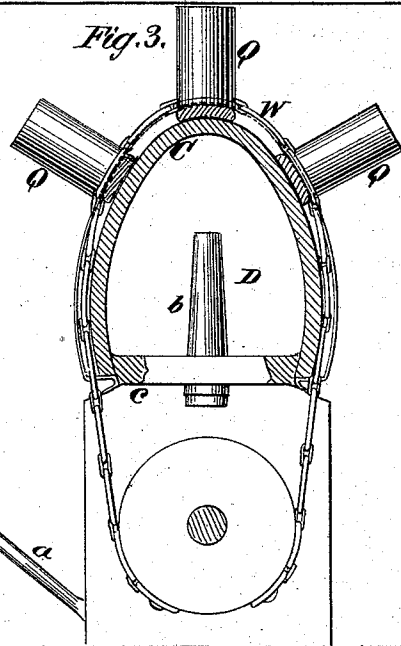
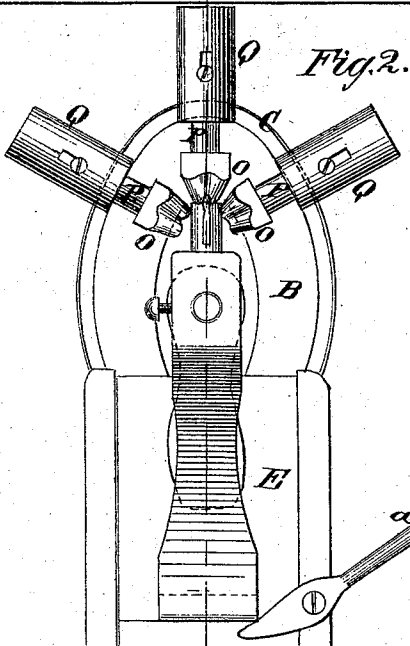
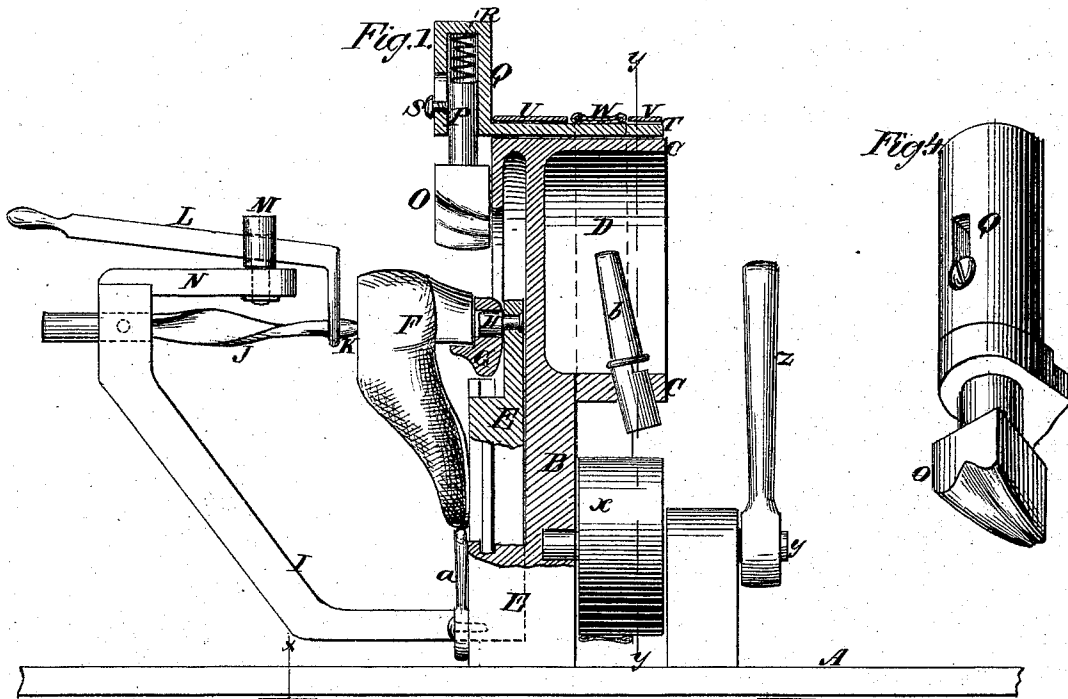


C. H. HELMS.
Heel-Polishing Machines.

No. 156,732.

Patented Nov. 10, 1874.



Witnesses:
John Becker
Sedgwick

Inventor:
C. H. Helms
PER *[Signature]*
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES H. HELMS, OF POUGHKEEPSIE, NEW YORK.

IMPROVEMENT IN HEEL-POLISHING MACHINES.

Specification forming part of Letters Patent No. **156,732**, dated November 10, 1874; application filed January 6, 1873.

To all whom it may concern:

Be it known that I, CHARLES H. HELMS, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Heel-Polishing Machine, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

In the drawing, Figure 1 is a vertical section of the machine, taken on the line *xx* of Fig. 2. Fig. 2 is a front elevation. Fig. 3 is a vertical section of Fig. 1, taken on the line *yy*. Fig. 4 is a view of one of the polishers detached, showing the socket in which it is confined.

Similar letters of reference indicate corresponding parts.

A is the bed-plate. B is an upright stand, which supports the polishers, to the rear side and top of which is attached arch C, the form of which arch governs the motion of the polishers. D is a chamber beneath the arch, open on the back side. E is a plate, which is confined to the stand B by cleats, so that it may slide vertically. The shoe F is confined to this slide, the upper part of which side extends up behind the heel, and receives the heel-piece G. This heel-piece is confined loosely to the slide by the screw H, and its rear side is convex, so that it may be readily turned in either direction while confined to slide. I is an arm attached to the lower edge of the sliding plate E, which extends outward and upward above the center of the heel, as seen in Fig. 1. J is a twisted spring, which slides through the arm, and is provided with a set-screw for fastening it. The point K of this spring bears against the last of the shoe, so as to press the shoe against the heel-piece. L is a lever of any suitable form, which works in the loose fulcrum-block M, the latter being placed on the cap-piece N of the arm. The spring J, from the arm, is twisted a quarter-turn, so that it is made to spring vertically or laterally by means of the lever L, and thereby turn the heel in either direction, to receive the action of the polishers. The convex side of the heel-piece allows of this motion of the heel. O represents the polishers, the shanks P of which are confined in the sockets Q, each of which sockets contains a spring,

R, as seen in Fig. 1, to force the polishers from the socket, but the action is limited by the slot and pin or screw S, as represented. The polishers and sockets stand radially from the heel upon the face of the stand B. Each socket and polisher is confined to the top of the arch by means of an arm, T, and the bands U V. W is a belt between the bands, which is connected with each arm T. The ends of this belt extend down, and are attached to the surface of the oscillating block X. This block has a rock-shaft, Y, to which is attached the operating-bar Z. Upon vibrating this bar back and forth, the arms T are moved over the surface of the arch, which gives the polishers a corresponding motion on the heel. The heel is raised up to the polishers, when the shoe has been affixed to the slide, by means of the foot-lever *a*.

The form of the rubbing end of the polisher is seen in Fig. 4. They are elastic only in the direction of their socket; but in their lateral vibrations they are governed by the form of the arch, and this may vary from a true arc of a circle as may be desired.

In the heel-polishing machines heretofore constructed the motion of the polishers has been confined to a true arc; but by my arrangement their motion is governed by the form of the arch. The arms T may be connected by means of links or joints instead of a belt, if desired.

To render the operation of polishing complete, a certain amount of heat is necessary; and this is supplied by means of a gas-burner, *b*, attached to the stationary shelf *c* at the base of the arch. The burner is connected with the necessary gas-supply by means of a flexible tube. The interior of the arch D is the heating-chamber. The arch and arms T are heated to a high temperature, and the polishers are raised to the desired temperature by heat-conductors therefrom.

In machines heretofore invented for polishing heels the means for holding, raising, and varying the position of the heel is very imperfect. By this arrangement the heel is held rigid while receiving the polish, and raised in position during the process by simply manipulating the lever L, and bearing on the foot-lever *a*, to give the requisite pressure against the polishers.

The lever Z may be operated either by hand or motive power, as may be found most convenient.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The arch C, arms T, sockets Q, and polishers O, constructed and arranged to operate substantially as shown and described, for the purposes specified.

2. The gas-burner *b*, chamber D, and stationary shelf *c*, substantially as and for the purposes described.

3. In combination with the arch C, the bands U and V and belt W, as and for the purposes described.

CHARLES H. HELMS.

Witnesses:

E. C. SMITH,

ROBT. H. HUNTER.